

$$\text{General Formula: } V_4 = \frac{R_3 \cdot R_4}{R_1 \cdot R_2} \cdot \frac{IS_{1A} \cdot IS_{2A}}{IS_{1B} \cdot IS_{2B}} \cdot \frac{V_1 \cdot V_2}{V_3} \quad (1)$$

Because Q1A and Q1B are matched,  $IS_{1A}$  and  $IS_{1B}$  are matched (to within 0.5% according to the datasheet). This means that these two terms cancel in equation 1. The same can be said for Q2A and Q2B. The resultant formula follows:

$$V_4 = \frac{R_3 \cdot R_4}{R_1 \cdot R_2} \cdot \frac{V_1 \cdot V_2}{V_3} \quad (2)$$

The circuit that was implemented had  $R_1 = R_2 = R_3 = R_4 = 100k\Omega$  with  $V_3 = 1V$  which resulted in an output:

$$V_4 = V_1 \cdot V_2 \quad (3)$$